IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No.: 1328
FUNKE *et al.*	Art Unit: 4121
Appl. No.: 10/579,076	Examiner: Pihonak, Sarah
371(c) Date: September 28, 2007	Atty. Docket: 2400.0390000/JMC/CMB/AKN
For: **Active Compound Combinations Having Insecticidal Properties**	

Declaration of Wolfram Andersch under 37 C.F.R. §1.132

Mail Stop Amendment

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

I, Wolfram Andersch of 51469 Bergisch Gladbach, Schlodderdicher Weg 77, a citizen of Germany, hereby declare:

1. that I received the doctor's degree in biology from the University of Göttingen, Germany, in 1983;

2. that I am now an employee of Bayer CropScience AG[1] in Germany as a biologist;

3. that I have specialized in the field of plant protection; and

4. that the following tests have been carried out under my supervision and control.

[1] Bayer CropScience AG is the assignee of the above-captioned application.

5. The expected efficacy of a given combination of two compounds is calculated according to the formula presented in Colby, S.R., "Calculating Synergistic and Antagonistic Responses of Herbicide Combinations," *Weeds 15*:20-22 (1967) as follows:

If

X is the efficacy expressed in % mortality of the untreated control for test compound A at a concentration of m,

Y is the efficacy expressed in % mortality of the untreated control for test compound B at a concentration of n,

E is the efficacy expressed in % mortality of the untreated control using the mixture of A and B at concentrations of m and n, respectively,

$$E = X + Y - \frac{X \bullet Y}{100}$$

6. If the observed insecticidal efficacy of the combination is higher than "E," then the combination of the two compounds is more than additive, *i.e.*, there is a synergistic effect.

Example 1

Spodoptera exigua test

Solvent: 7 parts by weight of dimethylformamide
Emulsifier: 2 parts by weight of alkylaryl polyglycolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration. Cabbage leaves (*Brassica oleracea*) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with larvae of the beet army

worm (*Spodoptera exigua*) while the leaves are still moist. After the specified period of time, the mortality in % is determined. A mortality rate of 100% means that all the caterpillars have been killed; a mortality rate of 0% means that none of the caterpillars have been killed.

According to the results presented in Table 1, the following combination shows a synergistic effect in comparison to the single compounds:

Table 1: **Spodoptera exigua** – Test

Active Ingredient	Concentration in parts per million (ppm)	Mortality in % after 6 days
I-1-4	0.032	20
L-Cyhalothrin	0.032	10
I-1-4 + L-Cyhalothrin (1 : 1) according to the invention	**0.032 + 0.032**	obs.* cal.** **60 28**

* obs. = observed insecticidal efficacy
** cal. = efficacy calculated with Colby-formula

Example 2

Spodoptera frugiperda test

Solvent: 7 parts by weight of dimethylformamide
Emulsifier: 2 parts by weight of alkylaryl polyglycolether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration. Cabbage leaves (*Brassica oleracea*) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with larvae of the fall army worm (*Spodoptera frugiperda*) while the leaves are still moist. After the specified period of time, the mortality in % is determined. A mortality of 100% means that all the

caterpillars have been killed; a mortality of 0% means that none of the caterpillars have been killed.

According to the results presented in Table 2, the following combination shows a synergistic effect in comparison to the single compounds:

Table 2: **Spodoptera frugiperda** – Test

Active Ingredient	**Concentration in ppm**	**Mortality in % after 4 days**
I-1-4	0.032	70
ß-Cyfluthrin	0.8	0
Deltamethrin	0 16	0
I-1-4 + ß-Cyfluthrin (1 : 25) according to the invention	**0.032 + 0.8**	**obs.*** **cal.**** **95** **70**
I-1-4 + Deltamethrin (1 : 5) according to the invention	**0.032 + 0.8**	**obs.*** **cal.**** **95** **70**

* obs. = observed insecticidal efficacy
** cal. = efficacy calculated with Colby-formula

The undersigned declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Monheim, Germany,

Date 26.10.2009

Dr. Wolfram Andersch